

Appl. No. 10/586,871
Amdt. dated January 26, 2010
Reply to Office action of October 27, 2009

REMARKS

Claims 10, 12, 14, 21 and 28-30 are presently in the application. Claims 1-9, 11, 13, 15-20, and 22-27 have been canceled. New claims 29 and 30 have been added. Claim 10 has been amended and claims 12, 14 and 21 have had their dependency changed.

Applicant would like to thank the examiner for the thorough consideration given to this application.

Initially, it should be noted that paragraphs [0020] and [0021] have been amended in order to provide the correct numerical designation for *the spring plate* in line 6 of paragraph [0020] and *the pump piston* in line 4 of paragraph [0021]. No new matter has been added.

Claims 10, 12, 14, 17, 21 and 28 have been rejected under 35 USC 102(b) as anticipated by Beeh (US 2,351,908), newly cited. Reconsideration of the rejection is respectfully requested.

Claim 10, as amended, is directed to a high-pressure pump for a fuel injection system of an internal combustion engine (p. 1, ll. 4-6), the pump comprising:

a housing **10** (p. 3, l. 11) with at least one pump element **18** (p. 4, l. 3) including a pump piston **20** (p. 4, l. 4) driven into a stroke motion by a drive shaft **12** (p. 4, ll. 2-6);
the pump piston being guided so that it can slide in a cylinder bore **28** of a housing part **22** and delimiting a pumping chamber **30** therein (p. 4, ll. 11-14);
a support element **40** supporting the pump piston against the drive shaft (p. 5, ll. 1, 2);
a prestressed return spring **60** acting on both the pump piston and the support element in the direction toward the drive shaft (p. 6, ll. 12-19),

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a receptacle **46** contained in the same housing **22** part that contains the cylinder bore **28**,

the housing part comprising an extension **26** that is at least approximately cylindrical (p. 4, l. 1, 9), is oriented toward the drive shaft, and contains the cylinder bore and the receptacle, an end of the cylinder bore oriented toward the drive shaft terminates at a plane containing a wall of the receptacle (Fig.2);

the receptacle being embodied in the form of at least one slot **46** in the extension of the housing part extending to an end surface of the extension oriented toward the drive shaft, the at least one slot being delimited by two walls **48** extending at least approximately parallel to each other (p. 5, ll. 9-14);

the support element being embodied as at least approximately rectangular in cross section and situated in the receptacle between the two walls of the slot (p. 5, ll. 14-16); and

the support element being guided so that it can slide between the two walls of the at least one slot in the receptacle in the direction of the longitudinal axis of the pump piston, but cannot rotate around the longitudinal axis (p. 5, ll. 20-22 and p.7, ll. 3-11).

Claim 10 requires, inter alia, that the cylindrical bore and the receptacle is contained in an approximately cylindrical extension of the housing part, the receptacle is in the form of a slot in the extension that extends to the end surface of the extension oriented toward the drive shaft, the slot is delimited by two approximately parallel walls, the support element is approximately rectangular in cross section and situated in the receptacle between the two walls of the slot, and the support element is guided so that it can slide between the two walls

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of the slot in the direction of the longitudinal axis of the pump piston, but cannot rotate around the longitudinal axis.

Beeh is relied upon, according to the examiner, for disclosing, inter alia, a receptacle (131) contained in the same housing part that contains the cylindrical bore (interior of 218), a support element (130), the support element being guided so that it can slide in the receptacle in the direction of the longitudinal axis of the pump piston (121), but cannot rotate around the longitudinal axis (Fig. 10), the receptacle being embodied in the form of at least one slot in the housing part (Fig. 16), the support element being embodied as at least approximately rectangular in cross section (Fig. 16), the housing part comprising an extension (barrel 115) that is at least approximately cylindrical, is oriented toward the drive shaft (122), and contains the cylindrical bore and the receptacle (Fig. 16).

To support a rejection of a claim under 35 U.S.C. 102(b), it must be shown that each element of the claim is found, either expressly described or under principles of inherency, in a single prior art reference. See Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 465 U.S. 1026 (1984).

While it may be reasonable to interpret barrel 115 shown in Fig. 16 of Beeh as being an approximately cylindrical extension of the housing part that is oriented toward the drive shaft 122 and contains the cylindrical bore and the receptacle, Beeh lacks disclosure that the receptacle is embodied in the form of at least one slot in the extension that extends to the end surface of the extension oriented toward the drive shaft, the at least one slot in the extension is delimited by two walls extending at least approximately parallel to each other, the support element is embodied as at least approximately rectangular in cross section and situated in the

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receptacle between the two walls of the slot, and the support element is guided so that it can slide between the two walls of the slot in the direction of the longitudinal axis of the pump piston, but cannot rotate around the longitudinal axis.

As explained on page 6, left hand column, lines 35-71, and shown in Figs. 10 and 16 of Beeh, tappet 125 supports the pump piston 121 (Fig. 10) or 301 (Fig. 16) against drive shaft 122 and plane faces 126 of the structure 102 guide the tappet so that it can be moved in the axial direction of the pump piston but prevented from turning. This structure is clearly not embodied within the receptacle of the barrel 115 but is contained in a distinct housing part, namely, the foot structure 102. Thus, the same problems exist in Beeh as are explained in applicants' specification with regard to the prior art (see, spec., p. 1, l. 19 through p. 2, l. 5), since the exact alignment of the guide structure 126 for the tappet 125 and of the cylinder bore is difficult. Furthermore, contrary to the examiner's position, element 130 is not disclosed as being a support element that can slide in the receptacle 131 but is a pivot pin extension of tappet 125 around which plunger 121 (Fig. 10) or 301 (Fig. 16) rotates during reciprocation.

There is no mention whatsoever in Beeh that the receptacle in barrel 115 has at least one slot extending to an end surface of the barrel oriented toward the drive shaft that is delimited by two walls extending at least approximately parallel to each other, or that a tappet approximately rectangular in cross section is situated between the two walls of the at least one slot in the receptacle and is guided so that it can slide between the two walls of the at least one slot in the receptacle in the direction of the longitudinal axis of the pump piston, but

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cannot rotate around the longitudinal axis. Therefore, Beeh is deficient under 35 USC 102(b) in anticipating claim 10. Withdrawal of the rejection is respectfully requested.

Claim 21 is dependent on claim 10. In addition to the elements recited in claim 10, claim 21 further requires that the return spring is a helical compression spring encompassing the extension of the housing.

As disclosed on pg. 8, left hand column, ll. 52-57 and seen in Fig. 16 of Beeh, the claimed returned spring (spring 303 in Fig. 16 identified by the examiner as the return spring) is located interiorly of the extension (barrel 115), i.e., interiorly of plungers 301, 302. Thus, the return spring does not encompass (i.e., form a circle about, encircle, surround) the extension as recited in the claim. Therefore, Beeh does not anticipate claim 21 under 35 USC 102(b). Withdrawal of the rejection is respectfully requested.

Claim 28 is dependent upon claim 10. The elements recited in claim 10 are incorporated into claim 28 by virtue of its dependency on claim 10. Therefore, Beeh does not anticipate claim 28 under 35 USC 102(b) for the reasons claim 10 is not anticipated by Beeh. Withdrawal of the rejection is respectfully requested.

Claim 29, newly added, is a combination of previous claims 10, 17 and 21. Thus, claim 29 is claim 21 rewritten in independent form and is identical in content to former claim 21. Claim 29 requires that the return spring is a helical compression spring encompassing the extension of the housing.

As disclosed on pg. 8, left hand column, ll. 52-57 and seen in Fig. 16 of Beeh, the claimed returned spring (spring 303 in Fig. 16 identified by the examiner as the return spring) is located interiorly of the extension (barrel 115), i.e., interiorly of plungers 301, 302. Thus,

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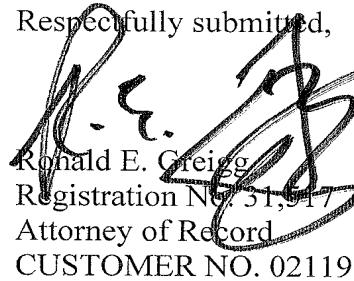
the return spring does not encompass (i.e., form a circle about, encircle, surround) the extension as recited in the claim. Therefore, Beeh does not anticipate claim 29 under 35 USC 102(b). Withdrawal of the rejection is respectfully requested.

Claims 12, 14 and 30 are dependent upon claim 29. The elements recited in claim 29 are incorporated into these claims by virtue of their dependency on claim 29. Therefore, Beeh does not anticipate claims 12, 14 and 30 under 35 USC 102(b) for the reasons claim 29 is not anticipated by Beeh. Withdrawal of the rejection is respectfully requested.

The Commissioner is hereby authorized to charge any necessary fees for this amendment to deposit account No. 07-2100.

Entry of the amendment and allowance of the claims are courteously solicited.

Respectfully submitted,



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